

CLAIMS

1. An apparatus comprising:
a plasma produced light source;
one or more collector optics; and
a magnetic field generator operative to generate a magnetic field around the one or more collector optics, the magnetic field generator comprising windings around a non-reflective surface in the one or more collector optics.
2. The apparatus of claim 1, wherein the windings comprise at least one of a wire, a bump, and an electret fiber.
3. The apparatus of claim 1, further comprising:
introducing a potential difference between the windings and the non-reflective surface.
4. The apparatus of claim 1, wherein the collector optics comprise a plurality of nested shells, the shells including reflective surfaces and non-reflective surfaces.

5. The apparatus of claim 4, wherein the magnetic field generator comprises:

a current supply connected to one or more of the nested shells and operative to provide a current along a length of said one or more nested shells.

6. The apparatus of claim 4, wherein the magnetic field generator comprises:

a voltage supply connected between a reflective side and a non-reflective side of one or more of said nested shells.

7. The apparatus of claim 4, wherein the magnetic field generator comprises:

a first additional shell around the collector optics;
a second additional shell inside the nested shells in the collector optics; and

a voltage supply operative to provide a potential difference between the first additional shell and the second additional shell.

8. The apparatus of claim 1, further comprising:

a plurality of foil traps between the source and the collector optics.

9. The apparatus of claim 1, wherein the light source comprises an extreme-ultraviolet (EUV) light source.

10. An apparatus comprising:
a plasma produced light source;
one or more collector optics; and
a magnetic field generator operative to generate a magnetic field around the one or more collector optics, the magnetic field generator comprising a solenoid structure adjacent a non-reflective surface in the one or more collector optics.

11. The apparatus of claim 10, wherein the light source comprises an extreme-ultraviolet (EUV) light source.

12. The apparatus of claim 10, further comprising:
a plurality of foil traps between the source and the collector optics.

13. A method comprising:

generating a magnetic field around collector optics in a lithography system with windings around a non-reflective surface in the collector optics; and

deflecting debris particles generated by a plasma producing light source from a reflective surface in the collector optics.

14. The method of claim 13, wherein said deflecting further comprises:

deflecting the debris particles toward a non-reflective surface in the collector optics.

15. The method of claim 13, wherein the windings comprise at least one of a wire, a bump, and an electret fiber.

16. The method of claim 13, further comprising:
introducing a potential difference between the windings and the non-reflective surface.

17. The method of claim 13, wherein the collector optics comprise a plurality of nested shells, the shells

including a reflective surface and a non-reflective surface.

18. The method of claim 17, wherein said deflecting further comprises deflecting debris particles from a reflective side of one shell to the non-reflective surface of an adjacent shell.

19. The method of claim 17, wherein said generating comprises:

providing a current along a length of each of said nested shells.

20. The method of claim 17, wherein said generating comprises:

introducing a potential difference between the reflective side and the non-reflective side of each nested shell.

21. The method of claim 17, wherein said generating comprises:

introducing a potential difference between a first additional shell around the collector optics and a second

additional shell inside the nested shells in the collector optics.

22. The method of claim 13, further comprising:
capturing debris particles with foil traps between the source and the collector optics.

23. The method of claim 13, wherein the lithography system comprises an Extreme Ultraviolet (EUV) lithography system.

24. A method comprising:
generating a magnetic field around collector optics in a lithography system with a solenoid structure adjacent a non-reflective surface in the collector optics; and
deflecting debris particles generated by a plasma producing light source from a reflective surface in the collector optics.

25. The method of claim 24, further comprising:
capturing debris particles with foil traps between the source and the collector optics.

26. The method of claim 24, wherein the lithography system comprises an Extreme Ultraviolet (EUV) lithography system.